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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/849,745	05/20/2004	John Sherwood	57.0498 US NP	8579

37003 7590 04/07/2006

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EXAMINER

FULLER, ROBERT EDWARD

ART UNIT PAPER NUMBER

3672

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/849,745

Applicant(s)

SHERWOOD ET AL.

Examiner

Robert E. Fuller

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the additional openings in the riser tube must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because in figure 1B, the line indicating item 121 is not pointing to any particular object. Corrected drawing sheets in compliance with 37

CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claim 15 is objected to because of the following informalities: There is a lack of antecedent basis for "the tube." For purposes of examination, "the tube" will be considered to mean "the conduit." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 4-8 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "essentially" in claims 4-8 and 21 is a relative term which renders the claim indefinite. The term "essentially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For the purposes of examination, the phrase "essentially one location" will be treated as "at least one location." Appropriate clarification and correction is required.

6. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "sufficiently" in claim 18 is a relative term which renders the claim indefinite. The term "sufficiently" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Appropriate clarification and correction is required.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-5, 8, 11, 16, 17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hardie (GB 2,261,030 A).

With regard to claims 1-5, 8, 11, and 16, Hardie discloses an apparatus for the recovery of liquids from underground reservoirs, where the device has the following features:

- a. A Venturi section (21) which generates a low pressure zone having a pressure less than the ambient formation gas pressure.
- b. A straight conduit (12) which provides a flow path from an upstream location in the well to the low pressure zone, and which terminates below where the constriction has its smallest diameter (figure 2).
- c. Additional openings (16) in the conduit, spaced around the circumference of the conduit at one location, the location being in between the low pressure zone and the upstream zone (11).
- d. The additional openings in the conduit appear to have smaller diameters than the diameter of the conduit itself (see figure 1), which would make the ratio of the areas of the additional opening and the tube fall within the range of 0 to 1.

With regard to claims 17, 19, and 20, the method of using the device of Swensen comprises all of the steps described in these claims.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 6, 7, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardie in view of Swensen (US 2002/0029888).

With regard to claim 6, Hardie discloses all of the limitations of the above claims, except for the conduit having a single opening for the entry of formation gas at a position between the upstream location and the low pressure zone.

Swensen discloses a device for extracting ground water from a well. Swensen's device has a single opening (24) for the entry of gas, where the opening is located in between the low-pressure zone (18) and the upstream location (Active Water Line – AWL; figure 1).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified to device of Hardie, to include only a single entry point for gas, in order to have provided a less obstructed entry path for the gases in the well, so that the gas would have entered the venturi section at a higher velocity, and thus created a higher pressure differential within the venturi section, which would have enabled the water to be lifted to higher height.

With regard to claims 7 and 21, Hardie discloses all of the limitations of the above claims, except for the conduit being adapted to maintain an essentially constant distance between the openings and the level of liquids in the well.

Hardie teaches the "steady-state" operation of his device to be the situation where the water level varies from two feet above the "static water level" and two feet below the "static water table."

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, that because of their similar structure, the device of Hardie would have operated in the same steady-state manner as Swensen's device, so that the distance between the openings of Hardie and the level of liquids in the well would have remained substantially the same.

11. Claims 9, 10, and 12-15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardie.

With regard to claims 9 and 10, Hardie fails to disclose the conduit terminating in or above a section of the constriction where the constriction has its smallest diameter.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the device of Hardie so that the conduit terminated above or at the location where the constriction had its smallest diameter, because the applicant has not established the criticality of terminating the conduit at any specific location with regard to the diameter of the constriction, as evidenced by the fact that all three possible locations are described in the claims.



With regard to claims 12-14, Hardie fails to disclose the constriction being located above the gas-producing perforations. Nor does Hardie disclose the upstream location being located below the gas-producing perforations.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have placed the device of Hardie within the well such that the constriction was located above the perforations and the upstream location was located below the perforations, because the device would have to be located in such a way in order for the device to pull gas—and consequently liquids—out of the well. It would have been obvious that if placed in any other location, the device simply would not have worked properly.

With regard to claim 15, Hardie fails to disclose the conduit having a length of more than 5 meters.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, that the conduit of Hardie could measure more than 5 meters in length, as the conduit would have needed to be whatever length was necessary for it to reach the level of the liquids in the well, which easily could have been more than 5 meters. Further more, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With regard to claim 18, Hardie fails to disclose the method of determining whether his device is capable of lifting the fluids to the desired height.

However, the determination of the gas flow rate, the height over which liquids have to be lifted to reach the low pressure zone, and the size of the constriction needed to create a low pressure zone capable of lifting liquids over the determined height are calculations well within the knowledge and ability of one of ordinary skill in the art. Therefore, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used the method steps of claim 18 to have determined the ability of the device of Hardie to lift liquids from the wellbore or to have used the method of claim 18 to have designed a fluid lift system similar to Hardie as the determination of the above values involves only routine skill in the art.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references further teach the state of the art with regard to liquid extraction devices for gas producing wells.

US 2004/0144545 – Lauritzen et al.


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert E. Fuller whose telephone number is 571-272-0419. The examiner can normally be reached Monday thru Friday from 8:00 AM - 5:30 PM. The examiner is normally out of the office every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

03/31/2006  
REF



Jennifer H. Gay  
Primary Examiner